

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings of claims in the application:

1. (original) A positioning system in a mobile communication network which responds position information which is a positioning target to a positioning request from an external client device, the positioning system in the mobile communication network comprising:

at least one node device including a positioning response generation function unit which generates the response of the position information to said external client device based on request accuracy information and request accuracy request class information.

2. (original) The positioning system in the mobile communication network according to claim 1,

wherein said request accuracy request class information comprises at least a first class which indicates to request said node device to respond position information which does not fail to satisfy positioning accuracy requested by said external client device to said external client device.

3. (original) The positioning system in the mobile communication network according to claim 2,

wherein said first class indicates to request said node device to respond an error to said external client device, if the position information which satisfies the positioning accuracy requested by said external client device does not exist.

4. (original) The positioning system in the mobile communication network according to claim 1,

wherein, if the position information does not satisfy positioning accuracy requested by said external client device, said request accuracy request class information comprises at least a second class which indicates to request said node device to respond the position information which is closest to said requested positioning accuracy to said external client device.

5. (original) The positioning system in the mobile communication network according to claim 4,

wherein said second class indicates to request said node device to respond an error to said external client device, if position information that can be responded does not exist.

6. (original) The positioning system in the mobile communication network according to claim 1,

wherein said request accuracy request class information comprises both of a first class which indicates to request said node device to respond position information which does not fail to satisfy positioning accuracy requested by said external client device to said external client device, and a second class which indicates to request said node device to respond the position information which is closest to said requested positioning accuracy to said external client device, if the position information does not satisfy the positioning accuracy requested by said external client device.

7. (original) The positioning system in the mobile communication network according to claim 1,

wherein said positioning system further comprises a holding function unit for retaining said positioning accuracy request class information.

8. (original) The positioning system in the mobile communication network according to claim 1,

wherein said positioning system further comprises a receiving function unit for receiving said request accuracy request class information transmitted by said external client together with the positioning request.

9. (original) The positioning system in the mobile communication network according to claim 1,

wherein, if said external client has transmitted said request accuracy request class information together with the positioning request, said positioning response generation function unit uses the request class information thereof to generate the response of said position information, whereas if said external client has not transmitted said request accuracy request class information together with the positioning request, said positioning response generation function unit uses request accuracy request class information held inside said positioning system in said mobile communication network to generate the response of said position information.

10. (original) A positioning system in a mobile communication network which responds position information which is a positioning target to a positioning request from an external client device, the positioning system in the mobile communication network comprising:

at least one node device including a positioning response generation function unit which generates the response of the position information to said external client device based on request freshness information and request freshness request class information.

11. (original) The positioning system in the mobile communication network according to claim 10,

wherein said request freshness request class information comprises at least a first class which indicates to request said node device to respond position information which does not fail to satisfy positioning freshness requested by said external client device to said external client device.

12. (original) The positioning system in the mobile communication network according to claim 11,

wherein said first class indicates to request said node device to respond an error to said external client device, if the position information which satisfies the positioning freshness requested by said external client device does not exist.

13. (original) The positioning system in the mobile communication network according to claim 10,

wherein, if the position information does not satisfy positioning freshness requested by said external client device, said request accuracy request class information comprises at least a second class which indicates to request said node device to respond the position information which is closest to said requested positioning freshness to said external client device.

14. (original) The positioning system in the mobile communication network according to claim 13,

wherein said second class indicates to request said node device to respond an error to said external client device, if position information that can be responded does not exist.

15. (original) The positioning system in the mobile communication network according to claim 10,

wherein said request freshness request class information comprises both of a first class which indicates to request said node device to respond position information which does not fail to satisfy positioning freshness requested by said external client device to said external client device, and a second class which indicates to request said node device to respond the position information which is closest to said requested positioning freshness to said external client device, if the position information does not satisfy the positioning freshness requested by said external client device.

16. (original) The positioning system in the mobile communication network according to claim 10,

wherein said positioning system further comprises a holding function unit for retaining said positioning freshness request class information.

17. (original) The positioning system in the mobile communication network according to claim 10,

wherein said positioning system further comprises a receiving function unit for receiving said request freshness request class information transmitted by said external client together with the positioning request.

18. (original) The positioning system in the mobile communication network according to claim 10,

wherein, if said external client has transmitted said request freshness request class information together with the positioning request, said positioning response generation function unit uses the request class information thereof to generate the response of said position information, whereas if said external client has not transmitted said request freshness request class information together with the positioning request, said positioning response

generation function unit uses request freshness request class information held inside said positioning system in said mobile communication network to generate the response of said position information.

19. (original) A positioning system in a mobile communication network which responds position information which is a positioning target to a positioning request from an external client device, the positioning system in the mobile communication network comprising:

at least one node device including a positioning response generation function unit which generates the response of the position information to said external client device based on request accuracy information and request accuracy request class information, and request freshness information and request freshness request class information.

20. (original) The positioning system in the mobile communication network according to claim 19,

wherein said request accuracy request class information comprises at least a first class which indicates to request said node device to respond position information which does not fail to satisfy positioning accuracy requested by said external client device to said external client device.

21. (original) The positioning system in the mobile communication network according to claim 20,

wherein said first class indicates to request said node device to respond an error to said external client device, if the position information which satisfies the positioning accuracy requested by said external client device does not exist.

22. (original) The positioning system in the mobile communication network according to claim 19,

wherein, if the position information does not satisfy positioning accuracy requested by said external client device, said request accuracy request class information comprises at least a second class which indicates to request said node device to respond the position information which is closest to said requested positioning accuracy to said external client device.

23. (original) The positioning system in the mobile communication network according to claim 22,

wherein said second class indicates to request said node device to respond an error to said external client device, if position information that can be responded does not exist.

24. (original) The positioning system in the mobile communication network according to claim 19,

wherein said request accuracy request class information comprises both of a first class which indicates to request said node device to respond position information which does not fail to satisfy positioning accuracy requested by said external client device to said external client device, and a second class which indicates to request said node device to respond the position information which is closest to said requested positioning accuracy to said external client device, if the position information does not satisfy the positioning accuracy requested by said external client device.

25. (original) The positioning system in the mobile communication network according to claim 19,

wherein said positioning system further comprises a holding function unit for retaining said positioning accuracy request class information.

26. (original) The positioning system in the mobile communication network according to claim 19,

wherein said positioning system further comprises a receiving function unit for receiving said request accuracy request class information transmitted by said external client together with the positioning request.

27. (original) The positioning system in the mobile communication network according to claim 19,

wherein, if said external client has transmitted said request accuracy request class information together with the positioning request, said positioning response generation function unit uses the request class information thereof to generate the response of said position information, whereas if said external client has not transmitted said request accuracy request class information together with the positioning request, said positioning response generation function unit uses request accuracy request class information held inside said positioning system in said mobile communication network to generate the response of said position information.

28. (original) The positioning system in the mobile communication network according to claim 19,

wherein said request freshness request class information comprises at least a third class which indicates to request said node device to respond position information which does not fail to satisfy positioning freshness requested by said external client device to said external client device.

29. (original) The positioning system in the mobile communication network according to claim 28,

wherein said third class indicates to request said node device to respond an error to said external client device, if the position information which satisfies the positioning freshness requested by said external client device does not exist.

30. (original) The positioning system in the mobile communication network according to claim 19,

wherein, if the position information does not satisfy positioning freshness requested by said external client device, said request accuracy request class information comprises at least a fourth class which indicates to request said node device to respond the position information which is closest to said requested positioning freshness to said external client device.

31. (original) The positioning system in the mobile communication network according to claim 30,

wherein said fourth class indicates to request said node device to respond an error to said external client device, if position information that can be responded does not exist.

32. (original) The positioning system in the mobile communication network according to claim 19,

wherein said request freshness request class information comprises both of a third class which indicates to request said node device to respond position information which does not fail to satisfy positioning freshness requested by said external client device, and a fourth class which indicates to request said node device to respond the position information which is

closest to said requested positioning freshness to said external client device, if the position information does not satisfy the positioning freshness requested by said external client device.

33. (original) The positioning system in the mobile communication network according to claim 19,

wherein said positioning system further comprises a holding function unit for retaining said positioning freshness request class information.

34. (original) The positioning system in the mobile communication network according to claim 19,

wherein said positioning system further comprises a receiving function unit for receiving said request freshness request class information transmitted by said external client together with the positioning request.

35. (original) The positioning system in the mobile communication network according to claim 19,

wherein, if said external client has transmitted said request freshness request class information together with the positioning request, said positioning response generation function unit uses the request class information thereof to generate the response of said position information, whereas if said external client has not transmitted said request freshness request class information together with the positioning request, said positioning response generation function unit uses request freshness request class information held inside said positioning system in said mobile communication network to generate the response of said position information.

36. (original) The positioning system in the mobile communication network according to claim 19,

wherein, if the position information does not satisfy positioning accuracy requested by said external client device, said request accuracy request class information is set to a second class which indicates to request said node device to respond the position information which is closest to said requested positioning accuracy to said external client device,

wherein, if the position information does not satisfy positioning freshness requested by said external client device, said request freshness request class information is set to a fourth class which indicates to request said node device to respond the position information which is closest to said requested positioning freshness to said external client device, and

wherein, if position information which satisfies both the positioning accuracy and the positioning freshness requested by said external client device does not exist, said node device responds the position information with the highest positioning accuracy to said external client device.

37. (original) The positioning system in the mobile communication network according to claim 19,

wherein, if the position information does not satisfy positioning accuracy requested by said external client device, said request accuracy request class information is set to a second class which indicates to request said node device to respond the position information which is closest to said requested positioning accuracy to said external client device,

wherein, if the position information does not satisfy positioning freshness requested by said external client device, said request freshness request class information is set to a fourth class which indicates to request said node device to respond the position information which is closest to said requested positioning freshness to said external client device, and

wherein, if position information which satisfies both the positioning accuracy and the positioning freshness requested by said external client device does not exist, said node device responds the position information with the newest positioning freshness to said external client device.

38. (original) The positioning system in the mobile communication network according to claim 19,

wherein, if the position information does not satisfy positioning accuracy requested by said external client device, said request accuracy request class information is set to a second class which indicates to request said node device to respond the position information which is closest to said requested positioning accuracy to said external client device,

wherein, if the position information does not satisfy positioning freshness requested by said external client device, said request freshness request class information is set to a fourth class which indicates to request said node device to respond the position information which is closest to said requested positioning freshness to said external client device, and

wherein, if position information which satisfies both the positioning accuracy and the positioning freshness requested by said external client device does not exist, said node device responds the position information to said external client device based on priority information showing whether the freshness or the accuracy is prioritized.

39. (original) The positioning system in the mobile communication network according to claim 38,

wherein, when said positioning system in said mobile communication network is set in such a way that said priority information gives a high priority to the accuracy, said node device responds the position information with the highest accuracy to said external client device.

40. (original) The positioning system in the mobile communication network according to claim 38,

wherein, when said positioning system in said mobile communication network is set in such a way that said priority information gives a high priority to the freshness, said node device responds the position information with the newest freshness to said external client device.

41. (original) A positioning method in a mobile communication network which responds position information which is a positioning target to a positioning request from an external client device,

wherein the response of the position information to said external client device is generated based on request accuracy information and request accuracy request class information.

42. (original) A positioning method in a mobile communication network which responds position information which is a positioning target to a positioning request from an external client device,

wherein the response of the position information to said external client device is generated based on request freshness information and request freshness request class information.

43. (original) A positioning method in a mobile communication network which responds position information which is a positioning target to a positioning request from an external client device,

wherein the response of the position information to said external client device is generated based on request accuracy information and request accuracy request class information, and request freshness information and request freshness request class information.

44. (original) A positioning server device in a mobile communication network which responds position information which is a positioning target to a positioning request from an external client device, the positioning server device in the mobile communication network comprising:

a positioning response generation function unit which generates the response of the position information to said external client device based on request accuracy information and request accuracy request class information.

45. (original) The positioning server device in the mobile communication network according to claim 44,

wherein said request accuracy request class information comprises a first class which indicates to request said positioning server device to respond position information which does not fail to satisfy positioning accuracy requested by said external client device to said external client device, and a second class which indicates to request said positioning server device to respond the position information which is closest to said requested positioning accuracy to said external client device, if the position information does not satisfy the positioning accuracy requested by said external client device.

46. (original) The positioning server device in the mobile communication network according to claim 44,

wherein said positioning server device further comprises a storage function unit which stores said request accuracy request class information for each said external client device.

47. (original) The positioning server device in the mobile communication network according to claim 44, further comprising:

a receiving function unit which receives said request accuracy request class information transmitted by said external client together with the positioning request.

48. (original) The positioning server device in the mobile communication network according to claim 44,

wherein said positioning server device further comprises a storage function unit which stores said request accuracy request class information for each said external client device;

a receiving function unit which receives said request accuracy request class information transmitted by said external client together with the positioning request; and

a merge function unit which, if said receiving function unit has received said request accuracy request class information transmitted by said external client together with the positioning request, selects said received request class information, and which, if said receiving function unit has not received said request accuracy request class information, selects said request accuracy request class information already stored in said storage function unit.

49. (original) A positioning server device in a mobile communication network which responds position information which is a positioning target to a positioning request from an external client device, the positioning server device in the mobile communication network comprising:

a positioning response generation function unit which generates the response of the position information to said external client device based on request freshness information and request freshness request class information.

50. (original) The positioning server device in the mobile communication network according to claim 49,

wherein said request freshness request class information comprises a first class which indicates to request said positioning server device to respond position information which does not fail to satisfy positioning freshness requested by said external client device to said external client device, and a second class which indicates to request said positioning server device to respond the position information which is closest to said requested positioning freshness to said external client device, if the position information does not satisfy the positioning freshness requested by said external client device.

51. (original) The positioning server device in the mobile communication network according to claim 49,

wherein said positioning server device further comprises a storage function unit which stores said request freshness request class information for each said external client device.

52. (original) The positioning server device in the mobile communication network according to claim 49, further comprising:

a receiving function unit which receives said request freshness request class information transmitted by said external client together with the positioning request.

53. (original) The positioning server device in the mobile communication network according to claim 49,

wherein said positioning server device further comprises a storage function unit which stores said request freshness request class information for each said external client device;

a receiving function unit which receives said request freshness request class information transmitted by said external client together with the positioning request; and

a merge function unit which, if said receiving function unit has received said request freshness request class information transmitted by said external client together with the positioning request, selects said received request class information, and which, if said receiving function unit has not received said request freshness request class information, selects request freshness request class information already stored in said storage function unit.

54. (original) A program executed by a positioning server device in a mobile communication network which responds position information which is a positioning target to a positioning request from an external client device, the program comprising:

a positioning response generation process of generating the response of the position information to said external client device based on request accuracy information and request accuracy request class information.

55. (original) A program executed by a positioning server device in a mobile communication network which responds position information which is a positioning target to a positioning request from an external client device, the program comprising:

a positioning response generation process of generating the response of the position information to said external client device based on request freshness information and request freshness request class information.

56. (new) A server of a mobile communication system including a mobile station, comprising:

a positioning request processing means which receives a positioning request which requests position information of said mobile station;

a storage means which holds request positioning accuracy and a positioning accuracy request level; and

a transmission means which transmits one of said position information and error notification in accordance with said request positioning accuracy and said request level as a response to said positioning request.

57. (new) The server according to claim 56,

Wherein said transmission means transmits said error notification, if accuracy of said position information does not satisfy said request positioning accuracy, and said request level is a first level, and transmits said position information, if the accuracy of said position information does not satisfy said request positioning accuracy, and said request level is a second level.

58. (new) The server according to claim 56,

wherein said mobile communication system comprises a regional area network and a management device which communicates with said regional area network, and

wherein said positioning request processing means carries out positioning processing for obtaining said position information of said mobile station in cooperation with said management device.

59. (new) The server according to claim 58,

Wherein said positioning request processing means receives said position information from said management device.

60. (new) The server according to claim 58,
wherein said positioning processing is any one of A-GPS positioning processing, Cell-ID positioning processing, and OTDOA positioning processing.

61. (new) The server according to claim 58,
wherein said transmission means transmits said error notification, if said positioning request processing means has failed in obtaining said position information.

62. (new) The server according to claim 56,
wherein said mobile communication system comprises a client device, and
wherein said positioning request processing means receives said positioning request from said client device, and transmits one of said position information and the error notification to said client device.

63. (new) The server according to claim 62,
wherein said positioning request processing means receives at least one of said request positioning accuracy and said request level from said client device.

64. (new) A client device of a mobile communication system comprised of a mobile station and a server, the client device comprising:

A transmission means which transmits a positioning request which requests position information of said mobile station; and

a receiving means which receives one of the position information of said mobile station and error notification from said server in accordance with request positioning accuracy and a positioning accuracy request level as a response to said positioning request.

65. (new) The client device according to claim 64,
wherein said receiving means receives said error notification, if position information in said server does not satisfy said request positioning accuracy, and said request level is a first level, and receives position information stored by said server, if the position information in said server does not satisfy said request positioning accuracy, and said request level is a second level.
66. (new) The client device according to claim 64,
wherein said mobile communication system comprises a regional area network and a management device which communicates with said regional area network, and
wherein the position information in said server is obtained by positioning processing carried out through cooperation of said server and said management device.
67. (new) The client device according to claim 66,
wherein the position information in said server is received by said server from said management device.
68. (new) The client device according to claim 66,
wherein said positioning processing is any one of A-GPS positioning processing, Cell-ID positioning processing, and OTDOA positioning processing.
69. (new) The client device according to claim 66 comprising:
receiving said error notification, if said server and said management device have failed in obtaining said position information.
70. (new) The client device according to claim 64,

wherein said transmission means transmits at least one of said request positioning accuracy and said request level to said server.

71. (new) A mobile station of a mobile communication system comprised of a server, a regional area network, and a management device which communicates with said regional area network, the mobile station comprising:

a radio communication means which communicates with said regional area network;
and

a positioning processing means which carries out positioning processing for obtaining position information of said mobile station in cooperation with said regional area network, said management device, and said server in response to a positioning request from said server,

wherein one of said position information and error notification is transmitted from said server in accordance with request positioning accuracy and a positioning accuracy request level.

72. (new) The mobile station according to claim 71, wherein said error notification is transmitted from said server, if accuracy of said position information does not satisfy said request positioning accuracy, and said request level is a first level, and

wherein said position information is transmitted from said server, if the accuracy of said position information does not satisfy said request positioning accuracy, and said request level is a second level.

73. (new) The mobile station according to claim 71,

wherein said positioning processing is any one of A-GPS positioning processing, Cell-ID positioning processing, and OTDOA positioning processing.

74. (new) The mobile station according to claim 71,

wherein said error notification is transmitted from said server, if obtaining said position information has failed.

75. (new) The mobile station according to claim 71,

wherein said mobile communication system comprises a client device which communicates with said server device, and

wherein one of said position information and the error notification from said server to said client device.

76. (new) A mobile communication system comprised of a server, a mobile station, a regional area network, and a management device which communicates with said regional area network,

wherein said server receives a positioning request which requests position information of said mobile station, holds request positioning accuracy and a positioning accuracy request level, and transmits one of said position information and error notification in accordance with said request positioning accuracy and said request level as a response to said positioning request, and

wherein said server, said mobile station, said regional area network, and said management device cooperate to carry out positioning processing for obtaining said position information.

77. (new) The mobile communication system according to claim 75,

wherein said server transmits said error notification, if the accuracy of said position information does not satisfy said request positioning accuracy, and said request level is the

first level, and transmits said position information, if the accuracy of said position information does not satisfy said request positioning accuracy, and said request level is the second level.

78. (new) A control method in a mobile communication system comprised of a mobile station and a server, the control method comprising:

receiving a positioning request which requests position information of said mobile station;

holding request positioning accuracy and a positioning accuracy request level; and

transmitting one of said position information and error notification in accordance with said request positioning accuracy and said request level as a response to said positioning request.

79. (new) A control method in a mobile communication system comprised of a mobile station and a server, the control method comprising:

receiving a positioning request which requests position information of said mobile station;

holding request positioning accuracy and a positioning accuracy request level; and

transmitting one of said position information and error notification in accordance with said request positioning accuracy and said request level as a response to said positioning request.

80. (new) A control method in a mobile communication system comprised of a mobile station, a server, a regional area network, and a management device which communicates with said regional area network, the control method comprising:

communicating with said regional area network by radio; and

carrying out positioning processing for obtaining position information of said mobile station in cooperation with said regional area network, said management device, and said server in response to a positioning request from said server,

wherein one of said position information and error notification is transmitted from said server in accordance with request positioning accuracy and a positioning accuracy request level stored in said server.

81. (new) A control method in a mobile communication system comprised of a server, a mobile station, a regional area network, and a management device which communicates with said regional area network, the control method comprising:

receiving a positioning request which requests position information of said mobile station;

holding request positioning accuracy and a positioning accuracy request level;

carrying out positioning processing for obtaining said position information in cooperation with said server, said mobile station, said regional area network, and said management device, and

transmitting one of said position information and error notification from the server in accordance with said request positioning accuracy and said request level as a response to said positioning request.